

23-7-82 82/07

BARG NEWS



**Monthly Newsletter of the
Ballarat Amateur Radio Group**

23-7-82.

JULY 1982

82/07 2

COMMITTEE 1982/1983

POSITION	NAME	CALL SIGN	TEL. HOME	TEL. WORK
PRESIDENT	GEORGE FOWLER	VH3DOK	326863	391954
VIC. PRESIDENT	DICK ANTOSIEWICZ	VH3AEX	323273	321818
SECRETARY	HANK HILVERTS	VH3NIA	393332	-
ASS. SECRETARY	HENRY MORITZ	VH3VMO	327569	301800
TREASURER	KEITH GRADY	VH3NWN	327016	370271
ASS. TREASURER				
TECH. OFFICERS	PHIL SEDDON	VH3AQM	315220	313166
"	JAN ROBINSON	VH3BTX	394170	315911 (EXT 26)
"	MURRAY FALSTON	VH3ARI	420447	322420
"	DICK ANTOSIEWICZ	VH3AEX	323273	321818
PSL - AWARDS MAN.	MAURIE BATT	VH3XEX	422245	-
PUBLICITY	MAURIE BATT	VH3XEX	422245	-
EDUCATION	TIM HUMPHREYS	VH3ANM	321613	321719
PROPERTY OFFICER	DICK ANTOSIEWICZ	VH3AEX	323273	321818
NEWS LETTER	MURRAY FALSTON	VH3ARI	420447	315000
"	BILL GRINER	VH3VUX	314070	-
COMMITTEE	CLIFF BILSTON	VH3PAF	347626	-
"	TIM WRIGHT	VH3VZO	327563	-

THE BALLARAT AMATEUR RADIO GROUP MEETS
ON THE LAST FRIDAY OF EACH MONTH AT 7.30 PM
THE MEETINGS ARE HELD AT THE BALLARAT EDUCATION
CENTRE IN HOPETOWN STREET, BALLARAT (OFF EASY STREET)

COMMITTEE MEETINGS ARE HELD ON THE MONDAY
NIGHT BEFORE THE FRIDAY NIGHT MEETING.

AT THE HOME OF G. FOWLER 17A CANTERBURY
STREET BALLARAT EAST AT 7.30 PM (NEAR RUSSELL
SQUARE)

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Ballarat Amateur Radio Group

VK3BML

ANNUAL GENERAL MEETING 1982, June

MEETING OPENED with some delay, due to Sec's car zonking out.

APOLOGIES: BHC ; ZBS ; NIQ ; ADT ; DS ; NIZ

Visitors Peter Huber and others were welcomed to the meeting

MINUTES of the previous meeting were accepted as published (D.J./VU)

BUS. ARISING FROM MINUTES: none

CORRESPONDENCE: (as stated in committee minutes, no change) (XEX/PAF)

TREASURER'S REPORT: as published and submitted to all members

(KLZ/DET)

PUBLICITY: George DS not present, but no new developments, it seems.

QSL and AWARDS : Maurie XEX had quite a swag of news. He had sent 10,749 QSLs outward during 1981/2 and received 5640 for the club.

Apart from that, he had sorted in excess of 40kg of VK3 QSLs

319 enquiries for call signs were serviced during that time, he also sold almost 400 DXWA and 141 Begonia awards and it turned into quite a money spinner for the club. awards were sent to 24 diff. countries.

30m Net: Cliff PAF had run 54 net ops so far and was reporting quite a pleasing response in regards to call-ins and members participation.

EDUCATION: Jim ANH reported that applicants for the NAACP course were down in numbers this year, a natural fall-off after the CB-Boom it seems. Some enquiries were already recorded for a new novice class. He mentioned some minor drw-backs, but was reasonably satisfied with the results overall and he stated that one third of all club members owed their "status" to the teachings through the club's members.

TECH. REPORT: Phil AQH gave a brief report on the year's ups and downs with the repeater saga. Currently, the repeater is up and going well, but could still be doing with some refinements, he said. Overall, reports from users were quite favourable.

PROPERTY:

PROPERTY: George DOK reported that the club now owned antennas for practically all bands for special events and that these could be loaned for tests to members etc. We will publish details in next issue of BARG newsletter.

NEWSLETTER: Clem YDI was congratulated on the improvement which had been made to the overall format and it was suggested that "special correspondents" be appointed (or called for) to service special-interest subjects in future editions.

GENERAL BUSINESS: Dick VU then mentioned that BARG will definitely be host to the western zone convention in november and called for formation of special committee for the organization of details, including the EXPO previously mentioned by Dick XCV.

VVX, VU, NIA, VZD, KLZ, XEX, KGL and WN were volunteers (?) for that committee and will meet during the coming week to discuss details. Dick VU was nominated as the convenor for the occasion.

(I think that DOK and ANH also got into the act, somehow.)

Dick VU also raised the question of the MTR43 unit which was bought some time ago for the construction of the repeater and subsequently discarded. We had a buyer for it and it was put to the meeting if such sale should take place. The vote was in favour and o.k'd.

Some mention was made about a request for financial assistance for a Heard Island DXpedition by some VK6 group, but the meeting was undecided about the bona fides and the motion lapsed.

Dick XCV then stated that, in absence of any comments from members, the present constitution was, from this day onwards, in power and binding to all members, - until the next AGM at least.

He also then proposed, as ratified by the Committee earlier on, that Maurie XEX be voted a LIFE MEMBER; by show of hands this was approved unanimously and Maurie was handed his framed certificate. This is a first in the club's history and we all wish Maurie a lot of years in which to enjoy the benefits of this membership.

Dick XCV next declared the positions of all executive members vacant and the new executive was duly elected without delay.

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ANNUAL GENERAL MEETING *1982* June.

Voting for new officebearers, went smoothly and quite fast.
By 9.35 a new executive was elected and installed ea.

President	George Fowler	VK 3 DOK
Vice president	Dick Antosiewicz	VK3Aex
Secretary	Hank Hilverts	VK3N1a
Ass Sec	Henry Moritz	VK3Vmo
Treasurer	Keith Grady	VK3Nwn
Tech Officer	Phil Seddon	VK3Aqm
Qsl/Awd MGR	Maurie Batt	VK3Xex
Publicity	Maurie Batt	VK3 Xex
Education	Jim Humphreys	VK3Anh
Newsletter	MURRAY Felstead	VK3Aai
Committee	Ian Robinson	VK3Btx
Committee	Bill Greiner	VK3Vvx
Committee	Cliff Bilston	VK3Paf
Committee	Jim Wright	VK3Vzd

A repeater Committee was allso formed, to lift some of the workload of Phil AQM shoulders, from memmore, they are DICK AEX, IAN BTX, MURRAY AAI, I am not shure if Clem YDI was in it too. SOMX CLUB NET will again run under CLIFF's expert guidens. After a few words from our new President, the meeting was then invited to partake in supper and also ~~me~~ asked to pay the new subs of 10 dollam appr. 20 members paid up, not a bad efford, but remember only finnnancial members receive the news letter. So hurry fellows and pay your subs, the club want last long if you dont. This year will be a very busy one for our club. And a host of activeties on the agenda, with hopefully greater participation from most if not all members, this will be one of our best years yet. Members stayed around and talked untill appr. 10,35 when rooms were clear ed. With some members retizing to Kevin Hughes VK3WN's place for a social chat and drink.

EDITORIAL.

Well, here we are with my first go at this mag. I hope you all like it.

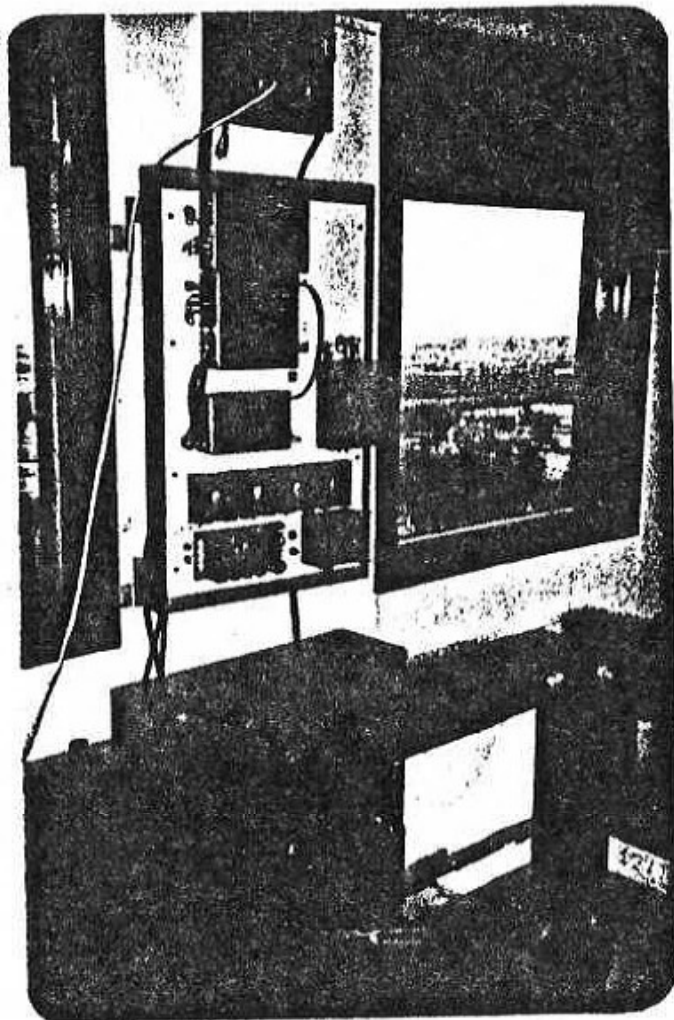
If any one has any articles, please contact me, preferably at my home address :- Murray Felstead, VK3AAI,
R.S.D. W920,
Ross Creek, 3351, phone 420447.

If passing through Ballarat, they can be left at any of the U.F.S. Dispensaries, in which case please clearly identify it for me, as there is another Murray working there. However, I would prefer them sent to my home address.

NEWS PICS.

Death defying feat by Dick to help repair the razor ribbon around the REpeater.

VK3RBA, with view of Ballarat through the window.





FACT SHEET

U.S. CONSUMER PRODUCT SAFETY COMMISSION
WASHINGTON, D. C. 20207

NO. 88: ANTENNA ELECTROCUTIONS

The U.S. Consumer Product Safety Commission has received reports of several electrocutions that occurred when metal antennas — radios, television, and citizens' band radio — touched overhead power lines. At the time of the accident, the victim was holding the metal antenna for installation or removal, and the electric current flowed from the power line through the conductive metal to the victim.

The following example shows how such an accident can occur:

DON CLIMBED UP A METAL LADDER TO HIS ROOF CARRYING A TV ANTENNA HE WAS GOING TO INSTALL. AS HE REACHED THE TOP OF THE LADDER, A STRONG WIND BLEW THE TOP OF THE ANTENNA HE WAS HOLDING INTO THE POWER LINE LEADING INTO THE HOUSE. AND DON WAS ELECTROCUTED.

Most residential power lines carry in excess of 2000 volts AC to transformers located in residential areas. The wires that carry electricity from these transformers to houses carry 240 or 120 volts AC. Any of these quantities of electrical current are powerful enough to kill.

Many persons mistake high voltage electric power lines for relatively low voltage telephone lines, since both are strung on poles. Power lines are usually 18-25 feet above ground in residential areas. Since the power and telephone wires may be difficult to distinguish, *avoid touching ANY wires going above or into your house.*

Don't assume power lines are insulated; most high voltage wires are not insulated. In addition, weathering and years of use can cause any insulation to degrade, peel or crack, and therefore not offer effective protection against shock.

High voltage power lines or the lines going from the transformer into the house can shock a person who is electrically grounded (i.e., directly or indirectly in contact with the earth to which all electricity flows) if he touches the wires with a metal object. The following conditions, however, *increase* the likelihood of electrocution and should be avoided:

1. Moisture.

Wet or sweaty feet and hands, in particular, decrease the body's resistance to electric current. To provide better insulation against shock, wear rubber boots or rubber-soled shoes when working around power lines.

2. Metal.

Touching a grounded metal ladder or gutter while holding an antenna against a power line turns the body into an excellent path of electrical current. The current can flow from the power line to the antenna, through the body, through the metal ladder or gutter, and finally to ground. Metal ladders 20 to 30 feet high also can inadvertently touch overhead power lines and provide a path for the electricity to flow through the person holding the ladder. It is suggested that you use wooden or fiberglass ladders when working around electrical wires.

3. Wind.

The wind can blow the antenna into a nearby power line. Don't install or remove antennas in moderate or heavy winds.

EMERGENCY AID FOR SHOCK

It is advisable to work with another person when installing or removing antennas. If your partner does receive a shock, don't touch him since his body could conduct the electricity to you; instead, try to pry or pull him away from the source of electricity with a length of dry wood, rope, a blanket, or another *non-metallic* object.

If breathing has stopped, use mouth-to-mouth resuscitation until the doctor or ambulance arrives and relieves you. If the heart has stopped, closed-chest cardiac massage must be done simultaneously. The ambulance should be informed when called that an electric shock has occurred; it can bring proper equipment such as an intensive care or cardiac care mobile unit equipped with a heart defibrillator and carrying trained personnel.

For more information about electrical safety around the home, see the Commission's fact sheet No. 62 *Electrical Products*.

FOR SALE FOR SALE FOR SALE FOR SALE FOR SALE FOR SALE FOR SALE FOR SALE.

Have you anything for sale? If so, contact the editor.

Do you want to buy or swap something? Again, use YOUR magazine.

FOR SALE.

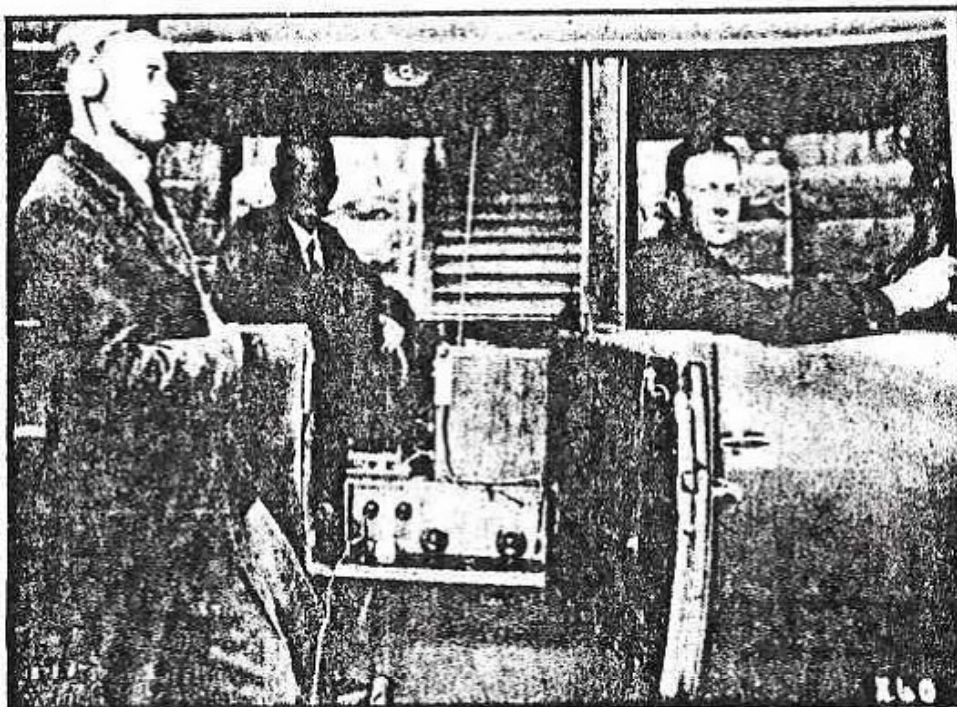
EXTERNAL V.F.O. TO SUIT TS 120. CONTACT ERNIE, VK3DET, PHONE 317604 (AH).

WANTED.

ARTICLES FOR B.A.R.C. MAGAZINE.

Help the club net. 3611k1z Thursday nights at 8pm local.
See you there.





Patrol-car communications in the old days: a world first.



Two of the innovators: Mr Allison, left, and Mr Canning.

The Morse and Model T patrols

IN THE early 1920s police "communications" constituted nothing more than a half-hourly telephone check with headquarters by the crews of Model T Ford patrol cars. This meant that often the crime had happened only five minutes after the last call.

One man, Constable F. W. Downie, became tired of arriving late at crimes and began to think about the use of the new wireless in police work, experimenting with a hired Marconi receiver in a police car. By 1926, the Victoria Police had created a world first: two-way wireless communication with a moving car.

Next week, police will unveil their new communications centre, D24, at Russell Street police headquarters. The project cost \$4.5 million, including \$2.5 million for the electronic hardware.

The new D24 will increase the number of police radio channels from 10 to 30. It will broadcast to more than 1400 cars — a far cry from the days when Melbourne at night was patrolled by one car to the north of the river, and another to the south.

In those days, they travelled six to a car and some wore leather flying caps and balaclavas to keep out the cold; it was the roaring twenties, and with the coming of

By Roy Eccleston

radio, the beginning of Constable Downie's brainchild, the police wireless patrol.

The cars held four patrol men, a wireless operator and a driver. Sometimes a black dog called Bully was taken along to quieten troublesome criminals. A wireless operator at that time, Mr Fred Canning, now 82, of Rye, recalls that the dog would often get its tail caught in the gear change.

Mr Canning, and Mr Cliff Allison, 81, of Brighton, who was also a wireless operator, remember the old days well. In fact, the pair were responsible for the design of the transmitter that sent morse messages to and from moving cars.

Mr Canning joined the police force in 1924, after a time as a wireless operator on a ship. He soon started work on the transmitter, and built it from scraps, completing the job in 1926.

It was Mr Allison who took the first historic police message from a moving car. "It was a car smash at Hampton," he recalls.

The early 12-cylinder Daimler

patrol cars were fitted with speedometers calibrated to 100 miles an hour, says Mr Canning, although the cars were supposed to be capable of only 86 mph, the drivers found that if the speedometer could be wound past 100 it would break. Naturally, a broken speedo was seen as a sign of driving prowess.

The crews of the patrol had a roving commission, according to Mr Canning. When they were busy, the patrol car would drop off a policeman at one job before going to the next. The patrolman would be collected later.

Car chases, then as now, were part of the work. It was in that area that driving skills were highly desirable, according to Mr Canning, as the police car edged close to the suspect's car to force it from the road. One favored method was to force it into a steel tram pole, he says. If that failed, as a last resort the senior man was allowed to draw his Webley and Scott .32 automatic pistol and shoot out the other car's windscreen.

Exciting, perhaps, but also dangerous. Three wireless operators were killed in road smashes in the 15 years that Mr Allison rode in the patrol cars.

One of the patrol's jobs was to check the clubs and cafes in the

early hours. Mr Canning remembers one morning, at about 2.30, when the four patrolmen had gone into a Chinese cafe, known to be popular with the underworld.

While Mr Canning, the driver, and Bully, the "ferocious" police dog were guarding the car, a familiar figure left the restaurant: "Who should come out but Squizzy Taylor, a very unpleasant character," he says. "With all the aplomb in the world he said 'How are you all?' and stuck out his hand and patted the dog on the head. It fawned all over him."

Morse, and the need to have wireless operators in the cars, ended in 1940, but the wireless patrol lasted until 1970, when it was replaced by the crime car squads.

Morse was replaced with voice transmission, broadcast from the communications centre, D24, which was opened in 1939.

While the centre has been updated a number of times, the name has remained the same. But it is not generally known that D24 was a misnomer from the beginning.

The name came from the planned location — room 24, in corridor D at Russell Street. But room 24 was partly demolished in construction work and room 23 was used instead.

10 23 cm Quad Yagi by G 3 JVL

This antenna provides a gain of 18 - 20 dB over dipole. The elements consist of circle-shaped loops. Behind the reflector loop (R) a second reflector (R₂) is arranged, consisting of a plain metal sheet (fig. 1). This enables gain optimizing without altering the match of the driven element (E).

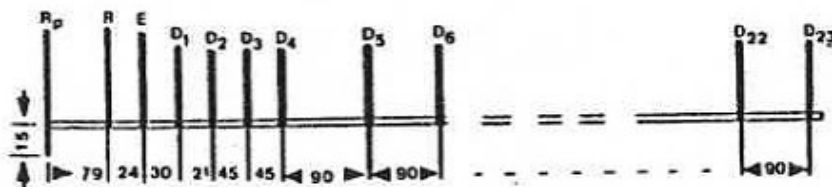


Fig. 1 Side View (All dimensions in mm)

The loops are made of metal sheet strips, 0.8 mm thick, and 4.7 mm wide. Material is aluminum, except for R and E. Here copper is used. The lengths of the strips are shown in fig. 2. E is made of a strip, 235 mm long with one hole at the centre. Mounting and soldering of E can be seen in fig. 3.

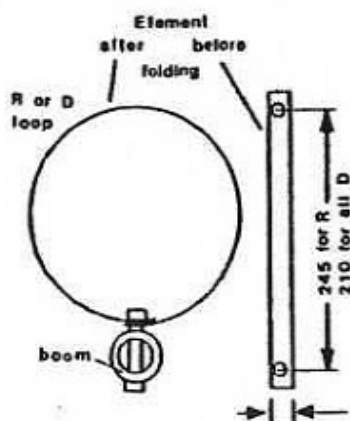


Fig. 2 Reflector R and Directors D

The ends of the strip are folded upward and soldered to the inner and outer conductor of a semirigid coaxial cable (UI 141, 50 Ohm PTFE dielectric with outer conductor of solid copper). This feeder cable passes through a hole in the boom. The loop is screwed to the boom with a spacer of 3.2 mm.

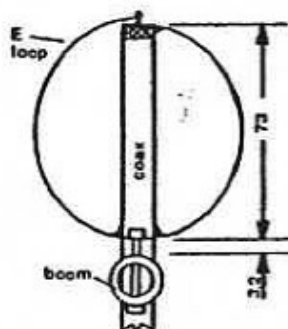


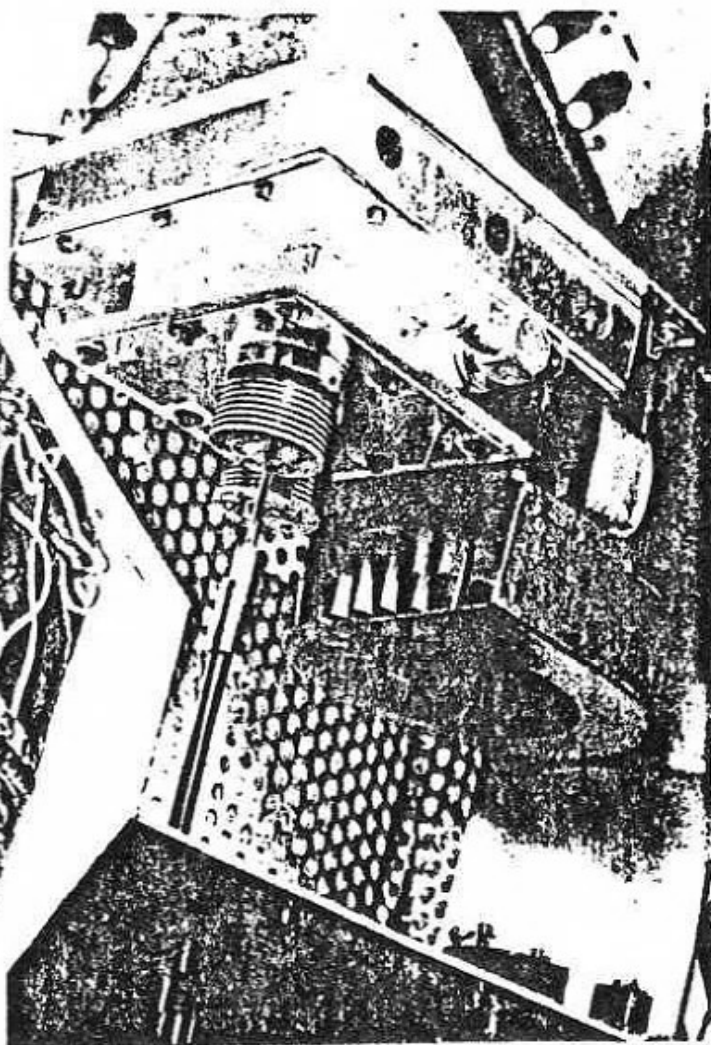
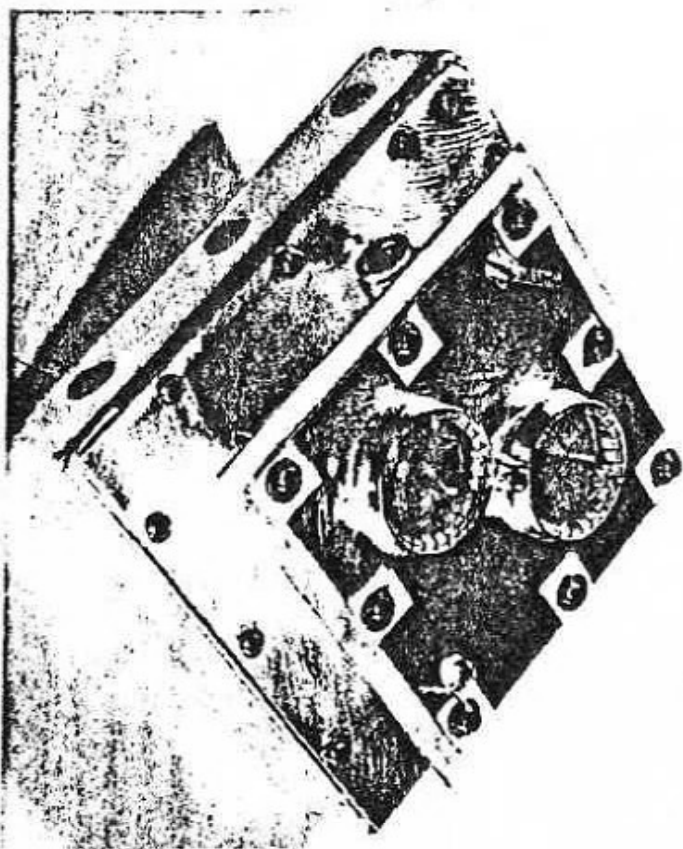
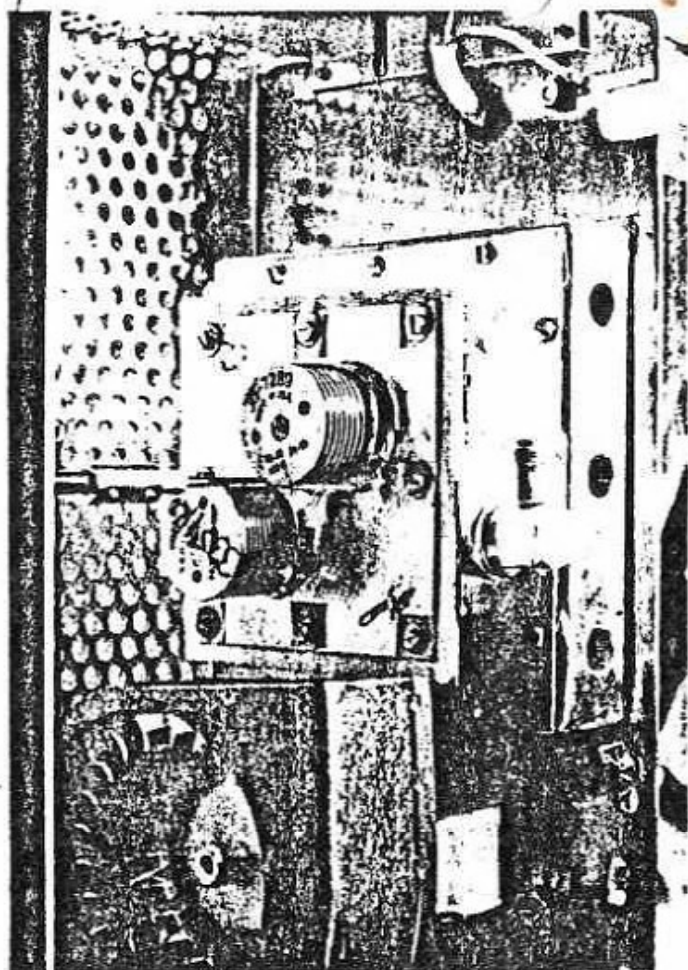
Fig. 3 The Driven Element E

This form of antenna has been built on 70 cm, 13 cm, and other non-amateur bands with good results. There is always an argument about aerial gains, but a comparison between a 70 cm version of the G3JVL Quad Loop and a 46 el. multibeam shows the quad loop to be 5 dB better. The author has scaled down a 18 element parabeam on 13 cm. The Quad Loop has been found to be 6 dB better.

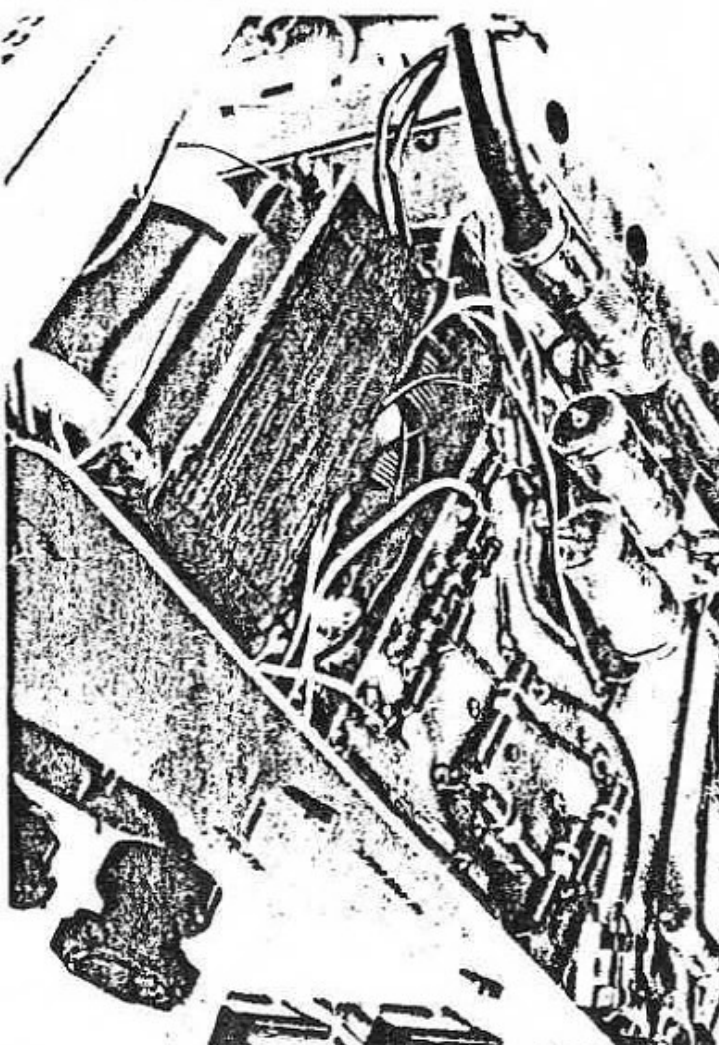
Independent measurements have been made by G 3 OBO. Phil has been able to measure the antenna gains and polar patterns, and has achieved very similar results when using professional test equipment.

The author is carrying out further work to obtain more gain with clean pattern by stacking and baying the arrays. Several of these Quad Loops can be combined in the normal manner to provide more gain providing that care is made to maintain symmetry.

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Pa ready to work



GROUNDING-GRID AMPLIFIER FOR 1296 MHZ

by WB 6 IOM

Construction

There are few tubes available that will provide the radio amateur with low-cost construction while at the same time delivering moderate power output in the 1215-MHz region. One popular low-cost tube is the 2C39. Also available are its newer brothers the 2C39A, 2C39B, 3CX100A5, and 7289. All look pretty much alike, but only the early versions have appeared on the surplus market. This amplifier uses 2C39As in a cavity assembly and is capable of delivering 100 watts or more as a linear amplifier, with a gain of 6 to 10 decibels. It can be built with simple hand tools.

Amplifier Details

Uhf circuits, particularly those involving cavities, do not lend themselves well to conventional schematic presentation, but the circuit diagram, Fig. 7-43, may aid the reader in identifying the components and understanding their functions. The structural features of the amplifier are not all apparent from the photographs, so are described in some detail, using component designations of Fig. 7-45 in referring to the various parts.

This is a grounded-grid amplifier. The large square box visible in the pictures houses the cathode input circuit. The whole assembly is shown from the top in Fig. 7-42, and from the bottom in Fig. 7-44. Details of the principal metal parts are given in Fig. 7-45. It will be seen that the bottom cover of the cathode compartment (part D in Fig. 7-45) is cut diagonally to permit access to the cathode circuit for adjustment purposes. The tuned circuit, L1-C2, is effectively a half-wave line, tuned at the end opposite to the tubes. The inductance, part E in Fig. 7-45, is tuned by means of a beryllium copper spring finger, visible in the lower left corner of Fig. 7-44. It is actuated by an adjustment screw running through a shoulder nut mounted in the removable cover plate. Input coupling is capacitive, through C1, a small glass trimmer at the center of the line, between the tubes. An approximate input match is established by adjustment of this capacitor.

The plate circuit, L2-C3, is a square tuned cavity not visible in the pictures. It is made by bending part G into a square, and soldering it to the top of part C and to the bottom of part B, with all lined up on a common center. The outside of the cavity is at ground potential. The tubes are mounted on a diagonal, at equal distances from the center. The plate tuning capacitor, C3, is coaxial. Its movable element is a 6-32 screw, running through a shoulder nut in the top plate of the bypass capacitor, C4, soon to be described. The fixed portion is a metal sleeve 5/16 inch inside diameter and 5/8 inch high, soldered to the top side of part C. It is centered on a 6-32 binder-head screw, threaded into the center hole in part C. This screw also holds a 3/8-inch insulating spacer that supports the cathode inductor, part E. Output coupling is by means of a fixed loop, L3, on a BNC or TNC coaxial fitting mounted in the 3/8-inch hole in part G, the cavity wall.

The bypass capacitor, C4, consists of the top cover of the plate cavity, part B, a layer of 0.02-inch Teflon sheet, and the top plate, part A. This combination does not act as a pure capacitance, because of the large size of the plates in terms of wavelength at 1296 MHz. It is important not to make substitutions here, as variations in size of the plates or thickness of the insulation may cause the capacitor to become resonant. The plates are held together with nylon screws. Metal screws with insulating sleeves, and insulating shoulder washers, may also be used. Nylon screws and other insulation, other than Teflon, may melt if the bypass capacitor becomes resonant. Nylon is very lossy at 1296 MHz.

Major sheet-metal parts are cut from 0.04- or 0.05-inch sheet-brass. The cutting, bending and soldering can be done with hand tools. The soldering is done readily over a kitchen stove, or with a 300-watt or larger soldering iron. Silver plating is recommended, to assure good electrical contact throughout. Several methods usable in the home are outlined in *The Radio Amateur's VHF Manual*. All sheet-brass parts are shown in Fig. 7-45, with dimensions and hole locations. Note that the bottom plate of the cathode assembly, part D, is cut diagonally, and fitted with spring finger stock to assure good electrical continuity when the assembly is closed.

On the smaller part of D is a 6-32 screw that runs through a shoulder nut soldered into the sheet, with the head of the screw on the outside when the cover is in place. The end of the screw bears on the beryllium copper spring finger, 5/8 inch wide, bent so that its position with respect to the cathode circuit varies with the position of the screw. Its position and approximate size should be evident from Fig. 7-44. The bottom end is soldered to the inside of part C. The free end should be wrapped with smooth insulating tape, so that the cathode bias will not be shorted out if the capacitor is closed down too far.

Spring finger stock is used to provide flexible low-inductance contact with the plate, grid and cathode elements of the tubes. Finger stock numbers are given for stock obtained from Instrument Specialty Co., Little Falls, N.J. The material used for tube contact purposes is No. 97-380. That on the triangular cover plate is 97-134. If tubes with recessed grid rings are used (example: the 7289) it is necessary to solder a small piece of brass against the bottom of the grid finger stock, to prevent the tube from being pushed in too far. Otherwise it is impossible to remove the tube without damage to either the finger stock or the tube. The finger stock used in the grid, plate and cathode holes should be preformed to fit, and then soldered in with a 200-watt or larger iron. That on part D is soldered to the outside of the plate. It may be necessary to strengthen the cover plate with a strip of brass soldered to the inside, opposite to the finger stock to prevent bulging. This should protrude about 1/16 inch from the edge of the cover plate. Any intermittent contact here will detune the input circuit severely.

The finger stock in the plate bypass should be flush with the sheet metal on the side facing the cavity. With the grid and cathode connections the stock may protrude somewhat. The soldering of the cavity parts should be done first. The parts should be lined up carefully, clamped together, and then soldered in place over a gas flame for preheating, doing the actual soldering with a small iron. Check alignment prior to final cool-down. The output BNC fitting can be soldered in at this time, adding the coupling loop later. It is merely a strip of copper or brass, 3/8 inch wide, soldered between the center pin of J2 and the cavity bottom. The strip should rest against the Teflon shoulder of the fitting, and extend 1/4 inch beyond the center pin before being bent 90 degrees down to the cavity bottom. Solder solidly to part A, and to the full length of the pin on J2. Now put in the finger stock. If a small iron is used, preheating with the gas flame, the heavy brass parts will not come loose. The top cover of the plate cavity, part B, is then soldered in place, using a clamp as before.

In cutting the Teflon insulation for the plate bypass, make tube holes only just large enough to clear the tube. There should also be some area of

insulation around the outer edges of the top plate. These precautions are helpful in preventing arc-over.

Connection to the tube heaters is made by bending a U-shaped piece of beryllium copper or spring bronze to make a snug fit in the heater cup at the end of the tube. The air-wound choke is connected directly to this, with the other end running to the feedthrough bypasses. The heaters being brought out separately permits a check on condition of tubes, by turning off the heaters one at a time. Leaving the tube in place, but cold, does not detune the system, and a comparison of the tubes may be made in this way. Note that neither side of the heater circuit can be grounded.

Tuning and Operation

When construction is completed and checked out, apply heater power to the tubes. Connect a milliammeter in series with the cathode resistor. Set the input glass trimmer at the middle of its range, and place the cover plate in position, but without putting in the screws as yet. Keep some pressure on it by hand to insure uniform contact. Apply 10 to 20 watts of driving power, tune C2, and observe the cathode current. Open the cathode compartment, move the input trimmer, replace the cover, and observe the current again. Repeat until highest current is achieved, but do not go over 120 mA. Reduce driving power, if necessary, to keep below this level. Fasten the cover plate in place, and recheck cathode current.

Supply cooling air, if this has not already been done. Be sure that adequate air flow is provided, especially if the plate input is to be near maximum ratings. If there is to be no cowling around the tube fins an air stream of some 150 ft³/min from a low-pressure blower across the area of the tube fins is required. With an enclosure confining the air flow to a path through the fins a 30 ft³/min high pressure blower should suffice. In either case it does no harm to have more. If you have a quiet blower it probably is not enough!

Connect a 50-ohm termination to J2 and apply plate power, preferably at a lower voltage than the maximum that will be used eventually. Apply drive, and tune the input circuit for maximum plate current, and the output circuit for maximum output. A suitable indicator is an incandescent lamp connected at the end of a 50-foot length of RG-58 cable. This will be so lossy that it will look like 50 ohms, regardless of the termination, and the lamp will show relative output. Maximum output may not coincide with minimum plate current.

Once the amplifier appears to be working normally, plate voltage may be increased. Recheck the tuning adjustments for each change in plate voltage. Use a value of cathode resistance that will result in about 50 mA plate current with no drive. With 1000 volts on the plates do not operate the amplifier for more than a few seconds at a time under key-down conditions. With a normal keying duty cycle you can run up to 400 mA plate current. With sub you may run up to 600 mA peak current, or a 300-mA indicated meter reading during normal voice operation. With the expected 100 watts output, with 300 to 400 in, the RG-58 cable should melt in a few minutes. This is not a very satisfactory method of measuring output, and some reliable power-indicating meter should be used for at least an intermittent check, if at all possible.

Described in January 1968 QST

This article was supplied by David, VK3VUB.
For further details, contact him.

123 82/0714 Grounded-Grid Amplifier for 1296 MHz

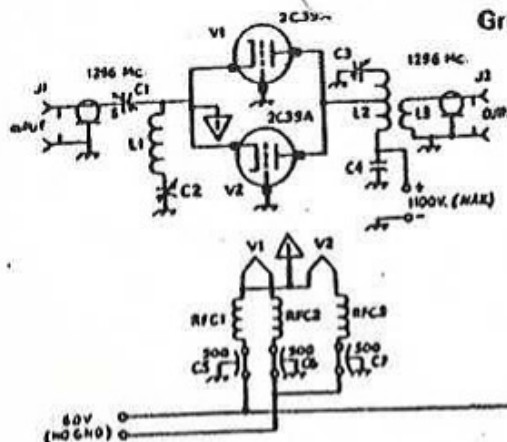


Fig. 7-43 - Representative circuit of the 1296-MHz cavity amplifier. The plate cavity and tuning device are indicated by L2, C3, the cathode inductance and tuning capacitor by L1, C2. Note that the heater supply must not be grounded.

- C1 - 5-pF glass trimmer.
- C2 - Beryllium-copper spring finger; see text and Fig. 7-44.
- C3 - Coaxial plate capacitor (see text).
- C4 - Plate bypass capacitor, composed of parts A and B, Fig. 7-45 separated by 0.02-inch Teflon sheet. See text.
- C5, C6, C7 - Feedthrough bypass, 500 pF.
- J1, J2 - Coaxial jack, BNC or TNC type.
- L1 - Cathode inductor, part E, Fig. 7-45. See text and Fig. 7-44.
- L2 - Plate cavity, composed of parts C, B and G of Fig. 7-45. See text.
- L3 - Copper strap 3/8 inch wide, from pin of J2 to top side of part C.
- RFC1, RFC2, RFC3 - 10 turns No. 22 enamel, 1/8-inch dia, 1 inch long.

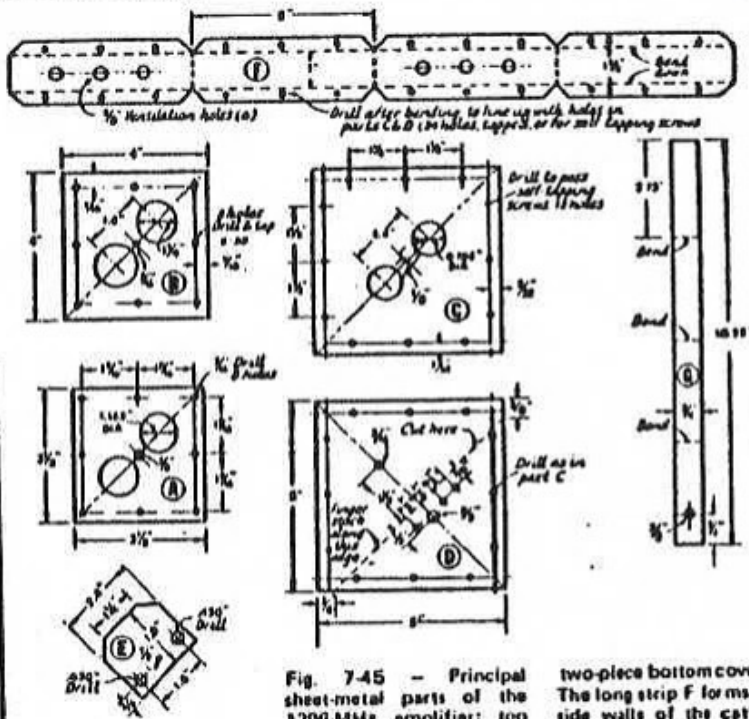


Fig. 7-45 - Principal sheet-metal parts of the 1296-MHz amplifier: top plate of the bypass capacitor, A; its bottom plate and top cover of the plate cavity, B; top plate of the cathode assembly, C; and

two-piece bottom cover, D. The long strip F forms the side walls of the cathode assembly, and G forms the side walls of the plate cavity, both before bending into their square shape.

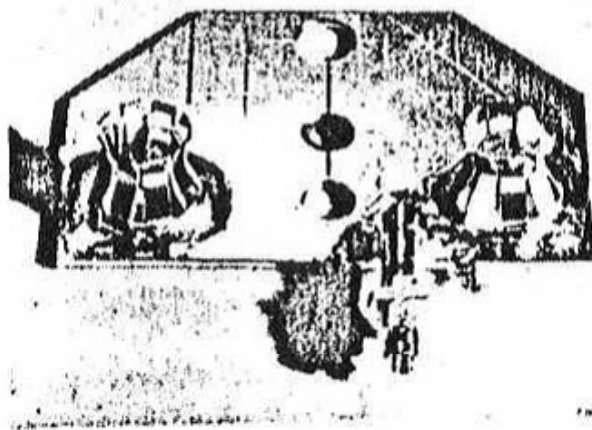
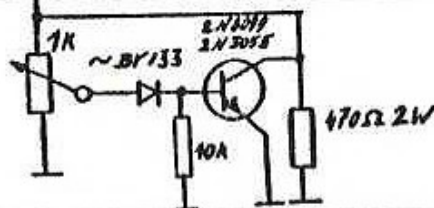
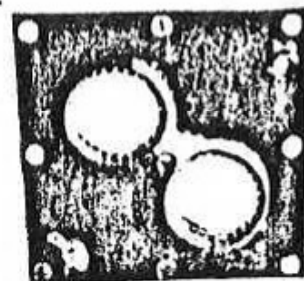
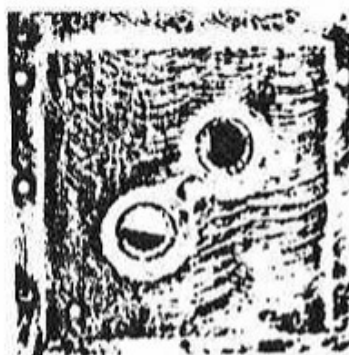


Fig. (E)



Begonia Award.

82/07 15

Income	
I4I awards Issued	3276.83
Int	<u>7.59</u>
	284.42

Expend	
Postage	362.95
Donations	<u>200.00</u>
	262.95

Total Income	3284.42
" Expend	<u>262.95</u>

Credit Bal.	21.47
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Details of award from the Hamilton Radio Club.

Wool Heritage Week. Is the name of the award,

Starts July 28th 1982 to August 3rd 1982.

Only one contact required.

Any band and any mode.

Open to Radio Amateurs, SWL's and CB'ers.

Cost of award is \$1.00.

Applications from B.A.R.G. members may be handed to VK3XEX who will deal with them.

Maurie Batt. VK3XEX.

Awards

The club year 1981 - 1982 was a very successful year for the clubs awards program, a total of 539 awards were issued. Apart from the applications from VK stations applications were received from 26 DX countries.

A very good start has been made for the 1982 - 1983 club year. Thanks to Cliff and the boys that come up on the awards net each week doing a very good job of promotion for the awards that come out of the club.

DX Widows Award.

Income	
398 Awards issued	\$797.13
Int	<u>1.00</u>
	\$798.13

Expend.	
Donations to Club.	\$643.00
Postage and Pub.	<u>117.85</u>
Tubes	<u>11.11</u>
	\$771.96

Total Income	\$798.13
" Expend	<u>771.96</u>

Credit Bal.	26.17
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QUESTIONS AND ANSWERS

THE COMMITTEE IS ASKING FOR SUGGESTIONS
ON THE FORMAT YOU WOULD LIKE AT OUR FRIDAY
NIGHT MEETINGS. E.G. SPEAKERS, LECTURES, OR NAME
YOUR SUGGESTIONS.

- 1.
- 2.
- 3.
- 4.

ALSO IF YOU WOULD LIKE OTHER ACTIVITIES
ON OTHER DAYS OR EVENINGS AS SEPARATE FROM
OUR NORMAL FRIDAY NIGHT MEETING.
E.G. FOX HUNTS, SCRAMBLES, NAME YOUR SUGGESTIONS.

- 1.
- 2.
- 3.
- 4.

NAME
CALL SIGN.

BRING YOUR REPLY TO THE NEXT MEETING